Extron® Electronics

INTERFACING, SWITCHING AND DISTRIBUTION

User's Manual

Audio/Video Distribution Amplifiers

DA 6V EQ
DA 6AV EQ
DA 6AV RCA EQ

DA 6SV EQ
DA 6SVA EQ
DA 6SVA RCA EQ

DA 6A
DA 8V/4V Dual EQ
DA 12V/6V Dual EQ
DA 3AV RCA

68-977-01, **Rev. B**
09 07

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Precautions

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1001 East Ball Road
Anaheim, CA 92805, USA

Europe, Africa, and the Middle East:

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Asia:

Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Japan:

Extron Electronics, Japan
Kyodo Building
16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

安全须知 • 中文

这个符号提示用户该设备用户手册中的操作和维护说明。

这个符号警告用户该设备机壳内暴露的危险电压，有触电危险.

注意

阅读说明书 • 用户使用该设备前必须阅读并理解有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

警告

电源 • 该设备只能使用产品上标明的电源。 设备必用有地线供电系统供电。第三条线（地线）是安设施，不能不用或跳过。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有备后或桌面电源的电源线，或任何接到市电系统电源线。

电源线保护 • 妥善布线， 避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。 设备部没有用户可以更换的零件。为避免出现触电危不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用防止机内敏感元件过热。不要用任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。必须使与厂家推荐的相同或相近型号的电池。按照生产厂的

议处理废弃电池。

声明

所使用电源为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. The Class A limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

NOTE *This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance with FCC emissions limits.*

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Quick Start Guide — DA AV EQ Series

To install and set up a DA AV EQ Series distribution amplifier, follow these steps:

Step 1

Turn all of the equipment off and disconnect it from the power source.

Step 2

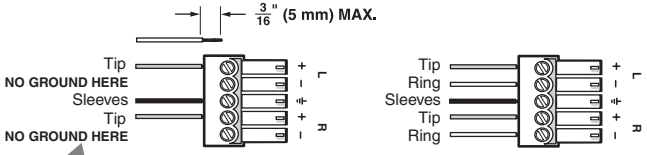
Mount the DA AV EQ on a rack shelf, under a desktop or podium, or through a desktop. See "Mounting the DA AV EQ Series" in chapter 2, "Installation and Rear Panel," for mounting procedures. See "Optional Accessories" in appendix A, "Specifications, Parts, and Accessories," for part numbers.

Step 3

Wire the audio captive screw connectors. For the models with captive screw connectors for audio input and output, follow the illustrations below to wire them.

Balanced Stereo Input **Unbalanced Stereo Input**

Wiring the captive screw audio input connectors



Unbalanced Output **Balanced Output**

CAUTION

For unbalanced audio, connect both sleeves to the center contact ground. DO NOT connect the sleeves to the negative (-) contacts.

Do not tin the wires!

Wiring the captive screw audio output connectors

WARNING *Disconnect all power to the unit before wiring.*

Quick Start Guide — DA AV EQ Series, cont'd

Step 4

Connect the cables of the input and output devices to the DA AV EQ, and power on all equipment.

- S-video devices are connected to 4-pin mini DIN connectors.
- Composite video devices are connected to BNC connectors.

Audio devices are connected to captive screw or RCA connectors.

Step 5

Adjust the potentiometers (pots) for the output cable lengths, if necessary.

- **If using very short output cables**, make sure that the potentiometers are in the unity gain position; that is, with the arrow on each pot pointing to the dot beside or above the pot.

  If the pots are already in the unity gain position (factory default settings), DO NOT CHANGE THEM. If they are not in the unity gain position, rotate them into position, using an Extron Tweeker. The illustration below shows the pots for outputs 1 and 2 at the unity gain position.

Composite Video Models S-video Models

Potentiometers at unity gain setting

- **If using long cables**, follow these steps to adjust the pots:

  a. Supply the Color Bars test signal to the input. (Recommendation: Use an Extron VTG 300 Video Test Generator to generate the test signal.)

  b. Adjust the Gain pot(s) for output pair 1 and 2 until the signal level at the far end is the same as the input (or the display shows the correct brightness and contrast).

  c. Adjust the EQ pot for outputs 1 and 2 so that no overshoot or round front corners appear at the far end on the scope (or until you see a sharp picture with no smearing).

  d. Repeat steps **b** and **c** for the rest of the outputs.

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Chapter One

Introduction

About this Manual

About the DA AV EQ Series

Introduction

About this Manual

This manual provides information on the Extron DA AV EQ series of audio/video distribution amplifiers and discusses how to install and operate them.

The terms "DA," "amplifier," and "distribution amplifier" are used interchangeably to refer to any of the models in the DA AV EQ series.

About the DA AV EQ Series

The Extron DA AV EQ Series products are high-performance composite video or S-video distribution amplifiers with audio. Models with audio only and video only are also available. The DA AV EQ series amplifiers feature long cable drive capability and individual gain and equalization adjustments (for every two outputs) to optimize the picture for displays that are located at significantly different distances from the DA.

Models

The DA AV EQ Series consists of the following 10 models:

DA 6V EQ — One input, six outputs, composite video with equalization and gain controls

DA 6AV EQ — One input, six outputs, audio, and composite video with equalization and gain controls

DA 6AV RCA EQ — One input, six outputs, audio on RCA connectors, and composite video with equalization and gain controls

DA 6SV EQ — One input; six outputs; S-video with luma (Y) equalization control, and luma and chroma gain controls

DA 6SVA EQ — One input; six outputs; audio; and S-video with luma (Y) equalization control, and luma and chroma gain controls

DA 6SVA RCA EQ — One input; six outputs; audio on RCA connectors; and S-video with luma (Y) equalization control, and luma and chroma gain controls

DA 6A — One input, six outputs, audio only

DA 3AV RCA — One input, three outputs, audio on RCA connectors, and composite video

DA 12V/6V Dual EQ — Dual composite video DA that can function as either a 1-input, 12-output DA with one active loop-through, or two 1-input, 6-output DAs in one enclosure (no loop-through); equalization and gain controls

DA 8V/4V Dual EQ — Dual composite video DA that can function as either a 1-input, 8-output DA with one active loop-through or two 1-input, 4-output DAs in one enclosure (no loop-through); equalization and gain controls

Features

Equalization and gain control — Independent gain and equalization control for each two outputs provides more flexibility and more accurate cable compensation to drive different lengths of cables from different outputs. (S-video models have Y-only equalization, and Y and C gain controls.)

NOTE *Outputs with similar lengths of cables should be paired in the same output group so that they can share the same gain and EQ setup.*

Passive video loop-through — All models except DA 6A, DA 12V/6V Dual EQ, and DA 8V/4V Dual EQ feature a passive video loop-through channel with a 75 ohm impedance toggle switch, which provides for local monitoring and cascading to another distribution amplifier.

Power supply — An internal 100 VAC to 240 VAC, 50/60 Hz, autoswitchable power supply is provided on all models.

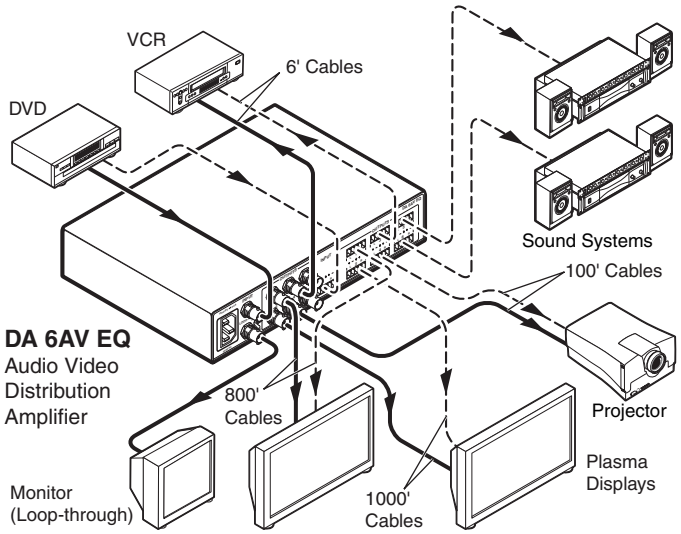
Enclosure — All models have a compact 1U, half rack enclosure, six inches in depth.

High bandwidth — Bandwidth of 150 MHz @ -3 dB for composite video and S-video maintains signal quality without picking up noise.

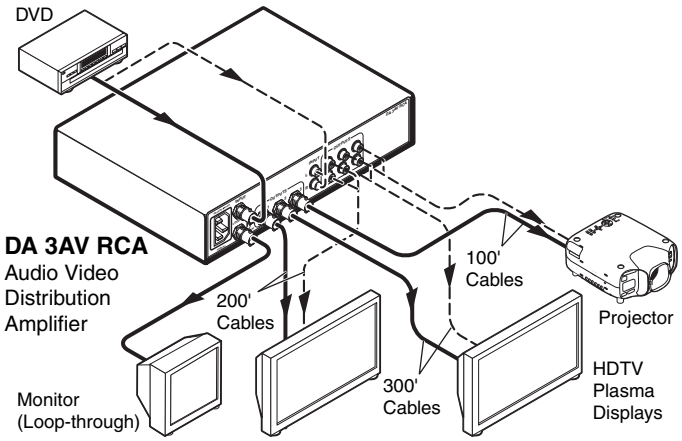
Rack and furniture mountability — All models can be mounted on a rack shelf, under a desk or podium, or through a desk or table top.

Application diagrams

The connection diagrams below show examples of how devices may be connected to the DA AV EQ Series distribution amplifiers.



Example of devices connected to a DA 6AV EQ



Example of devices connected to a DA 3AV RCA

Chapter Two

Installation and Rear Panel

Mounting the DA AV EQ Series

Rear Panel Features and Cabling

Setting the Audio Output Gain

Mounting the DA AV EQ Series

The DA AV EQ distribution amplifiers can be set on a table; mounted on a rack shelf; or mounted through or under a desk, podium, or tabletop.

The following optional mounting kits are available for the DA AV EQ Series:

- **RSB 126** 1U, 6" deep basic rack shelf (part #60-604-10)
- **RSU 126** 1U, 6" deep universal rack shelf kit (part #60-190-10)
- **RSB 129** 1U, 9.5" deep basic rack shelf (part #60-604-01)
- **RSU 129** 1U, 9.5" deep universal rack shelf kit (part #60-190-01)
- **MBU 125** under-desk mounting bracket kit (part #70-077-01)
- **MBD 129** through-desk mounting bracket kit (part #70-077-02)

Tabletop use

Four self-adhesive rubber feet are included with the unit. For tabletop use, affix one foot at each corner of the bottom of the DA, and place the unit in the desired location.

Rack mounting

UL rack mounting requirements

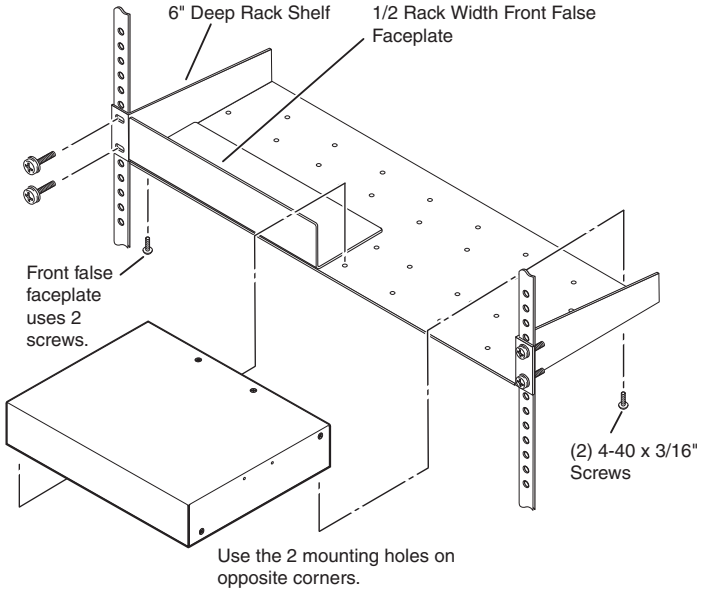
The following Underwriters Laboratories (UL) requirements pertain to the safe installation of the equipment in a rack.

1. **Elevated operating ambient temperature** — If the equipment is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the equipment in an environment compatible with the maximum ambient temperature (Tma = +113 °F, +45 °C) specified by Extron.
2. **Reduced air flow** — Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
3. **Mechanical loading** — Mount the equipment in the rack so that a hazardous condition is not achieved due to uneven mechanical loading.
4. **Circuit overloading** — Connect the equipment to the supply circuit and consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
5. **Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

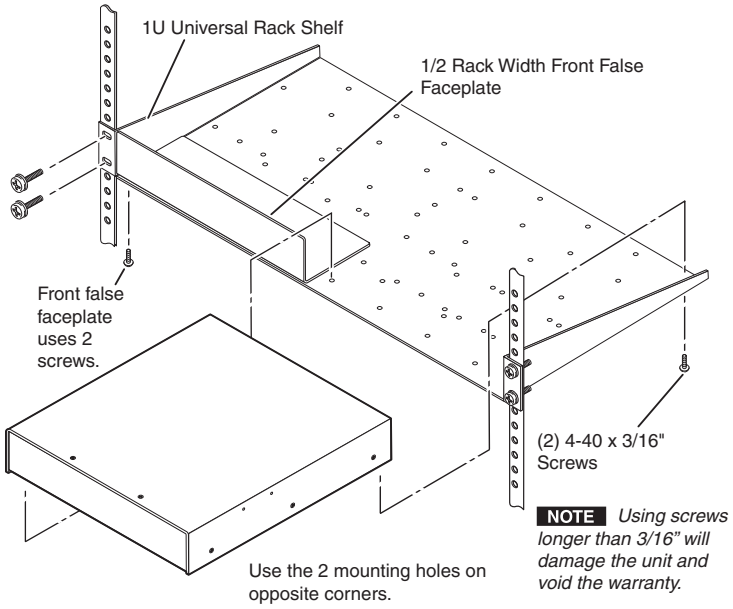
Rack mounting procedure

To mount the distribution amplifier on a 6" deep or 9.5" deep rack shelf,

1. If rubber feet were previously attached to the bottom of the unit, remove them.
2. Mount the unit on the rack shelf, using two 4-40 x 3/16" screws in opposite (diagonal) corners to secure it.
3. Install blank panel(s) or other unit(s) on the rack shelf.
4. Attach the rack shelf to the rack using the supplied bolts.



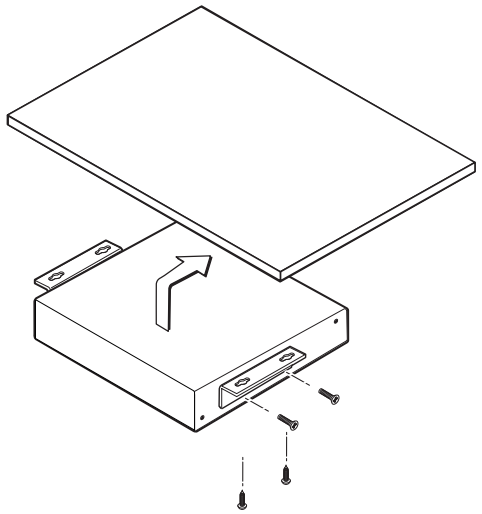
Mounting a DA AV EQ on a 6" deep rack shelf



Mounting a DA AV EQ on a 9.5" deep rack shelf

Furniture mounting

Furniture-mount the DA AV EQ under a desk or shelf using the optional mounting kit (part #70-077-01), as illustrated below.



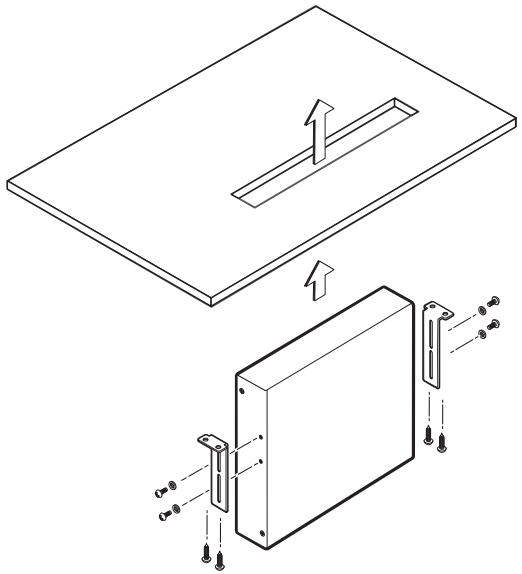
Under-desk mounting the DA AV EQ

To mount the DA AV EQ under a desk, podium, or table top,

1. If rubber feet were previously attached to the bottom of the unit, remove them.
2. Remove the two screws from one side of the unit. Retain the screws for possible later reassembly.
3. Attach one bracket to the side of the unit, using the provided machine screws.
4. Repeat steps **2** and **3** on the other side of the unit.
5. Hold the DA with the attached brackets against the underside of the table or other furniture. On the mounting surface, mark the location of the bracket's screw holes.
6. Drill pilot holes 1/4" (6.4 mm) deep and 3/32" (2 mm) in diameter into the table or desk top at the marked screw locations. The holes should be drilled from the underside or inside (concealed side) of the furniture where the amplifier will be located.
7. Insert #8 wood screws into the four pilot holes. Tighten each screw into the mounting surface until slightly less than 1/4" of the screw head protrudes.
8. Align the mounting screws with the slots in the brackets and place the unit against the surface, with the screws through the bracket slots.
9. Slide the unit slightly forward or back, then tighten all four screws to secure it in place.

Through-desk mounting

Mount the DA AV EQ through a desk or table, using the optional through-desk mounting kit (part #70-077-02).



Through-desk mounting the DA AV EQ

1. Mark the opening through which the unit will be mounted — approximately 1.8" by 8.9" (4.6 cm by 22.6 cm).
2. Cut out the material from the installation area with a jigsaw.
3. Drill pilot holes 1/4" (6.4 mm) deep and 3/32" (2 mm) in diameter in the desk or table at the locations of the mounting bracket screws. The holes should be drilled from the underside or inside (concealed side) of the furniture where the amplifier will be located.
4. Using the four provided wood screws, attach the brackets to the mounting surface.
5. Slide the unit up and down or back and forth in the mounting brackets until the face of the DA is at the desired height. Tighten the screws that secure the bracket in place.

   If the screws are inaccessible to a screwdriver,

   a. Mark the location of the brackets relative to the screws.

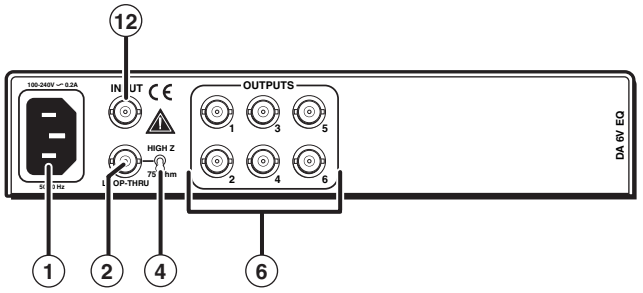
   b. Remove the DA from inside the furniture.

   c. Tighten the screws.

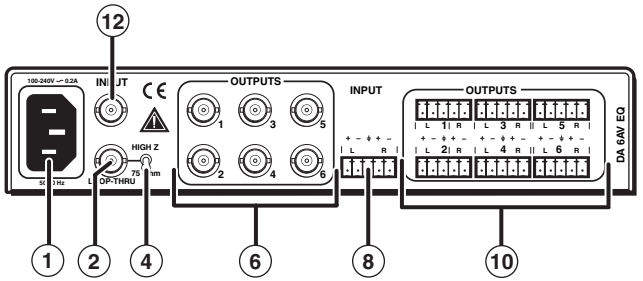
   d. Replace the DA inside the surface (repeat step **4**).

Rear Panel Features and Cabling

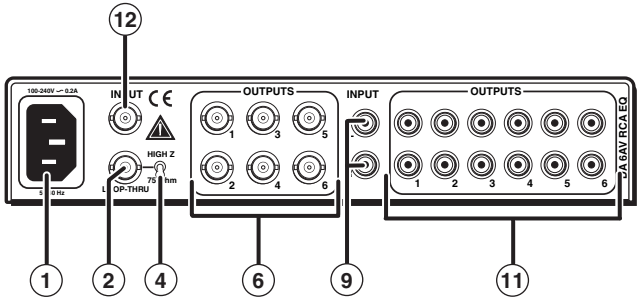
The following diagrams show the rear panel configurations of the 10 models in the DA AV EQ series.



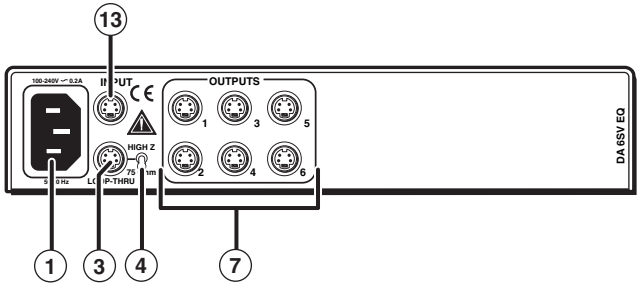
DA 6V EQ rear panel



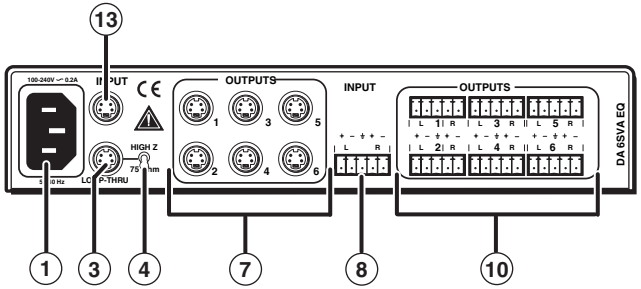
DA 6AV EQ rear panel



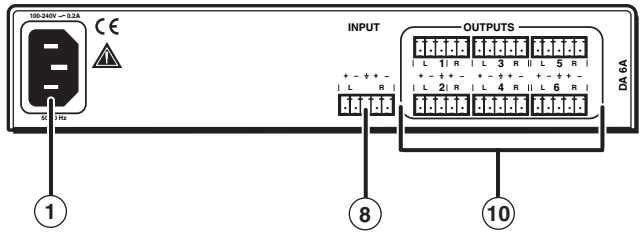
DA 6AV RCA EQ rear panel



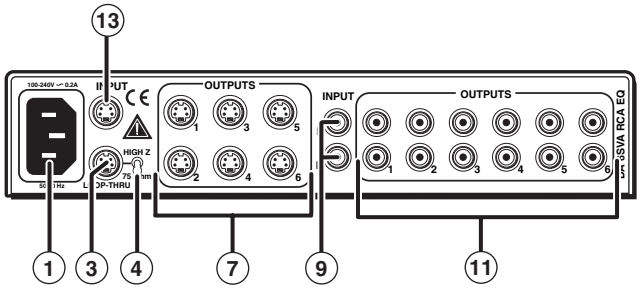
DA 6SV EQ rear panel



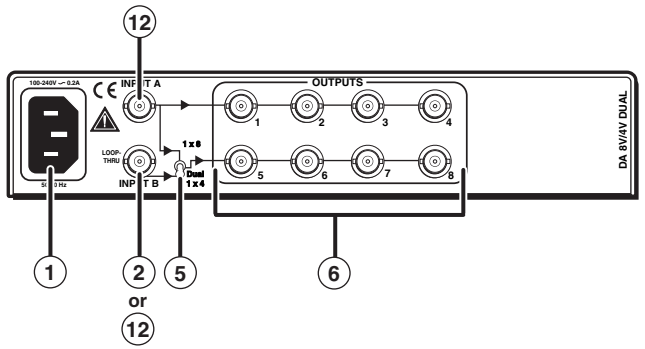
DA 6SVA EQ rear panel



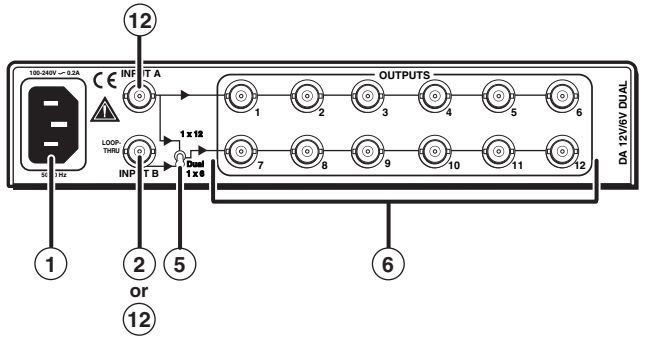
DA 6A rear panel



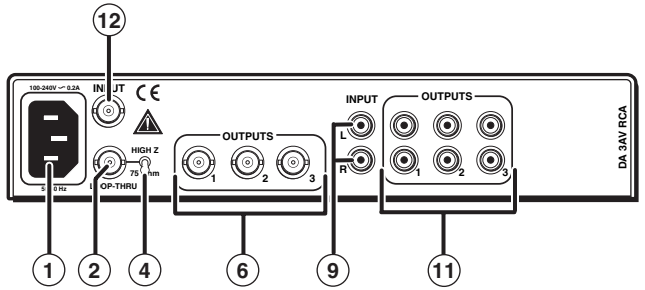
DA 6SVA RCA EQ rear panel



DA 8V/4V Dual EQ rear panel



DA 12V/6V Dual EQ rear panel



DA 3AV RCA rear panel

(1) **AC power connector** — Plug a standard IEC power cord into this male connector to connect the distribution amplifier to a 100 to 240 VAC, 50 Hz or 60 Hz power source.

② **Passive Loop-Thru connector (composite video)** — (All models except DA 6A and the three S-video models) Connect a monitor to this female BNC video loop-through connector.

NOTE *This connector functions as an input on the DA 12V/6V and 8V/4V Dual EQ models when they are operating in Dual mode.*

③ **Passive Loop-Thru connector (S-video)** — (DA 6SV EQ, DA 6SVA EQ, and DA 6SVA RCA EQ only) Connect a monitor to this female 4-pin mini DIN video loop-through connector.

④ **Termination toggle switch** — (All models except DA 6A, DA 12V/6V Dual EQ, and DA 8V/4V Dual EQ) Set this switch to High Z (up) if a monitor is plugged into the passive Loop-Thru connector. Set the switch to 75 Ohm (down) to simulate a monitor when none is attached to the Loop-Thru connector.

⑤ **Dual mode toggle switch** — (DA 12V/6V Dual EQ and DA 8V/4V Dual EQ only) Use this switch to toggle between operating modes.

- **DA 12V/6V EQ:** Switches between operating as one 1-input, 12-output DA with active loop-out (up), and two 1-input, 6-output DAs (down).
- **DA 8V/4V EQ:** Switches between operating as one 1-input, 8-output DA with active loop-through (up), and two 1-input, 4-output DAs (down).

⑥ **Video outputs 1-6 (composite video)** — Connect output monitors, projectors, and/or other devices to these female BNC connectors.

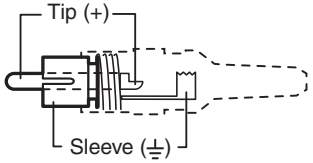
⑦ **Video outputs 1-6 (S-video)** — Connect output monitors, projectors, and/or other devices to these female 4-pin mini DIN connectors.

⑧ **Audio input** — Connect an audio input source to this female 5-pin captive screw connector.

Balanced Stereo Input **Unbalanced Stereo Input**

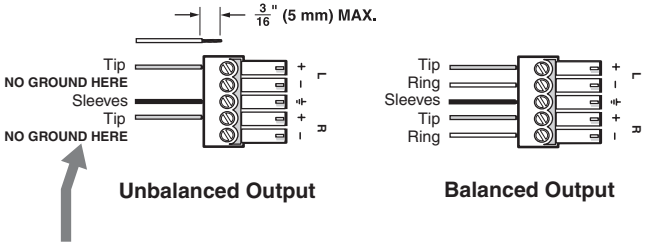
Wiring the captive screw audio input connectors

⑨ **Audio input (RCA)** — Connect an unbalanced audio input source to these female RCA connectors. (See the diagram below.)



RCA plug diagram

⑩ **Audio outputs** — Connect speakers to these 5-pole captive screw connectors. Wire the captive screw connectors for stereo output as shown in the following diagram.



Unbalanced Output **Balanced Output**

CAUTION

For unbalanced audio, connect both sleeves to the center contact ground. DO NOT connect the sleeves to the negative (-) contacts.

Do not tin the wires!

Wiring the captive screw audio output connectors

⑪ **Audio outputs (RCA)** — Connect speakers to these RCA connectors. (See the plug diagram under ⑨, above.)

⑫ **Video input (composite video)** — Connect a composite video source to this female BNC connector.

⑬ **Video input (S-video)** — Connect an S-video source to this female 4-pin mini DIN connector.

Setting the Audio Output Gain

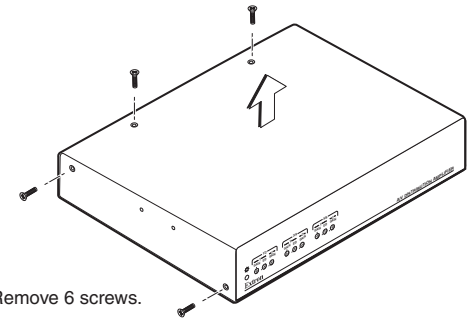
On the DA 6SVA EQ, DA 6AV EQ, and DA 6A audio models, you can set the gain for the left and right channels independently.

NOTE *This applies only to models with captive screw audio connectors.*

On the internal board, each audio output has a set of jumpers (one left and one right). By placing these jumpers on the appropriate pins on the board, you can set the gain for each channel to -6 dB, 0 dB, +6 dB, or unity, depending on whether the output is wired for balanced or unbalanced audio.

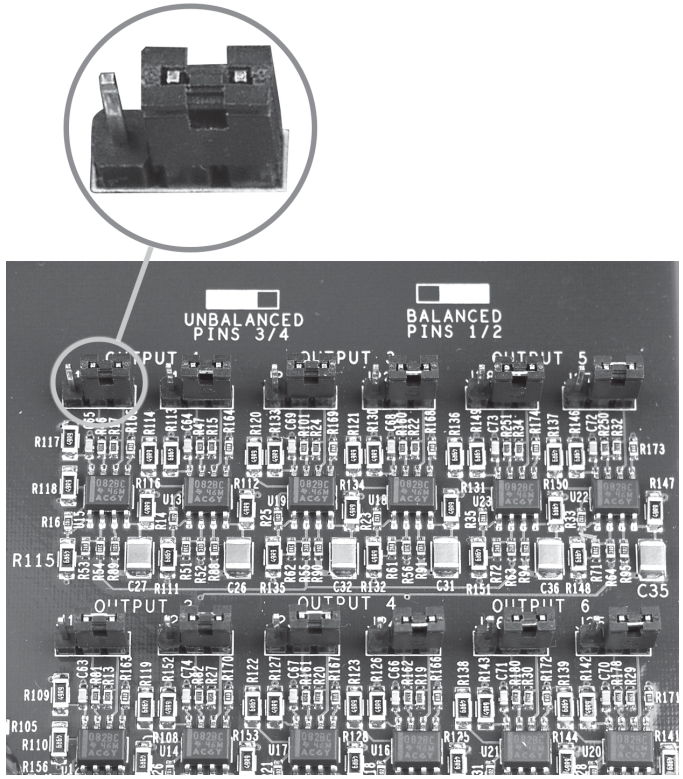
To set the gain for an output channel using the internal jumpers,

1. Using an Extron Tweeker or other small Phillips screwdriver, remove the six screws from the sides and top of the unit, and carefully lift off the top cover.



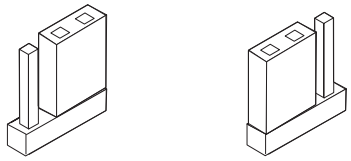
Removing the top cover from the DA

2. By default, all jumpers are on the middle and right pins for each output's right and left channel — the configuration for balanced audio. (See the photograph on the next page.)



Jumpers on the internal board in their default (balanced) position

To change any output channel to unbalanced audio, lift the jumper off the middle and right pins, and place it on the left and middle pins, as shown in the following illustration.



Output gain jumper positions for balanced and unbalanced audio

3. Repeat step **2** for each output channel that you want to set.

The following table shows the resulting gain levels for each possible jumper position and balanced/unbalanced wiring combination.

Output Wiring \ Jumper Position	**Balanced** (Jumper on right and middle pin)	**Unbalanced** (Jumper on left and middle pin)
Balanced	0 dB	+6 dB
Unbalanced	-6 dB	0 dB

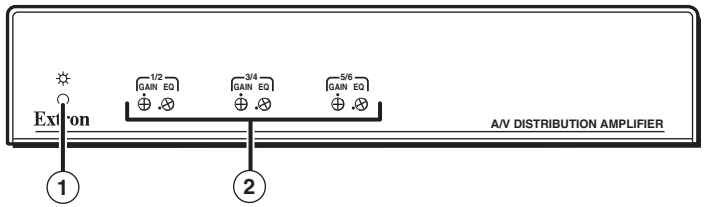
For example, if you wire output 1 as an unbalanced audio and you place the jumpers for both channels on the left and middle pins, the gain is 0 dB.

Chapter Three

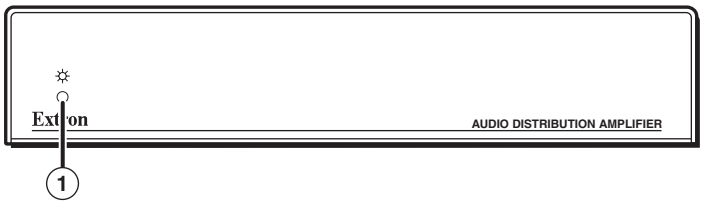
Front Panel Features and Operation

Front Panel Features

The following diagrams show the five different front panel configurations of the DA AV EQ series.

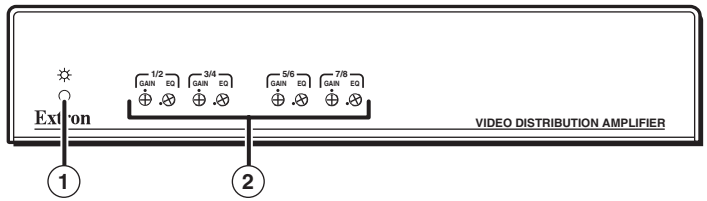


DA 6AV EQ, DA 6AV RCA EQ, and DA 6V EQ front panel

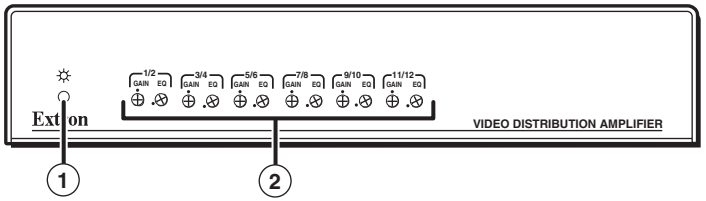


DA 6A and DA 3AV RCA front panel

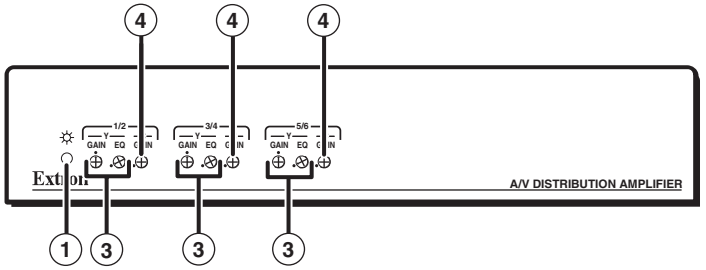
NOTE *The above illustration shows the DA 6A front panel. The DA 3AV RCA front panel is identical except that it is identified in the lower-right corner as "A/V Distribution Amplifier."*



DA 8V/4V Dual EQ front panel



DA 6V/12V Dual EQ front panel



DA 6SV EQ, DA 6SVA EQ, and DA 6SVA RCA EQ front panel

(1) **Power indicator LED** — This green LED lights when the distribution amplifier is receiving power.

(2) **Gain and EQ potentiometers** — (Composite video models; one set for each pair of outputs) Use an Extron Tweeker or a small Phillips screwdriver to rotate these potentiometers to adjust for gain and equalization (EQ) for connected devices with long cables.

(3) **Gain and EQ potentiometers (luma**) — (SV and SVA EQ models; one set for each pair of outputs) Use an Extron Tweeker or a small Phillips screwdriver to rotate these potentiometers (labeled with **Y**, above it) to adjust the luminance gain and equalization (EQ) when devices with long cables are connected.

(4) **Gain potentiometer (chroma)** — (SV EQ and SVA EQ models; one for each pair of outputs) Use an Extron Tweeker or a small Phillips screwdriver to rotate this potentiometer (labeled with **C**, above it) to adjust the chroma gain.

Gain and Equalization Controls

To set up your DA AV EQ, you may need to adjust the gain and equalization (EQ) for the output cable lengths. Gain and EQ are adjusted from the front panel of all DA AV EQ series products except the DA 6A and DA 3AV RCA. On S-video models, you can adjust luma (Y) gain and equalization, and chroma (C) gain. On composite video models, you can adjust Gain and EQ. Adjustments are made for each pair of outputs.

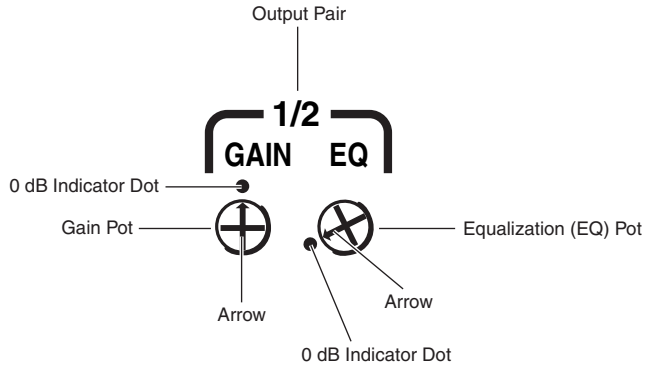
Gain and EQ potentiometers (pots) on the front panels enable you to make gain and equalization adjustments. Each pot has a white dot either above it (composite and Y gain) or to the lower left of it (EQ and C gain). These dots indicate 0 dB unity.

Use an Extron Tweeker or a small Phillips screwdriver to rotate these pots clockwise to increase gain or equalization, or counterclockwise to decrease.

The DA AV EQ products have one EQ pot and one or two Gain pots for each **pair** of outputs. Therefore, gain and equalization can be adjusted only for a pair of outputs at a time. For example, if you adjust the equalization pot for output 1, output 2 is automatically adjusted at the same time and by the same amount, .

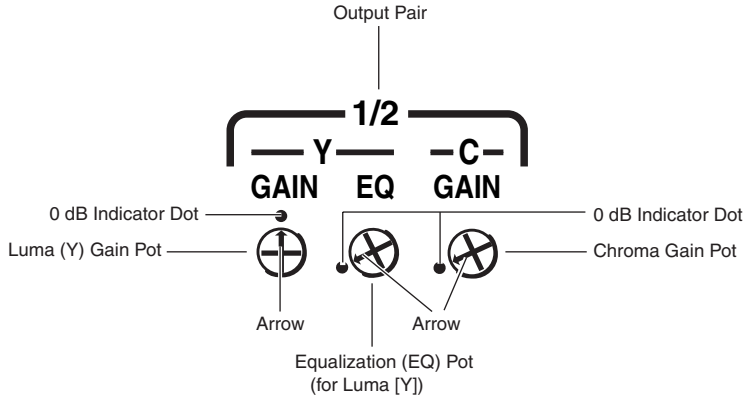
NOTE *This means that you should have cables of the same length for both outputs of a pair.*

- **DA 6V EQ, DA 6AV EQ, DA 6AV EQ RCA, DA 8V/4V Dual EQ, and DA 12V/6V Dual EQ** — The front panels of these models feature one Gain and one EQ pot for each pair of outputs. The illustration below shows the Gain and EQ pots for outputs 1 and 2.



Gain and EQ potentiometers for an output pair

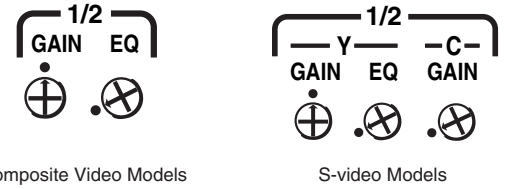
- **DA 6SV EQ, DA 6SVA EQ, and DA 6SVA RCA EQ** — The front panels of these models each contain one Y Gain, one Y EQ, and one C Gain potentiometer for each pair of outputs. The illustration below shows the Y Gain, EQ, and C Gain potentiometers for outputs 1 and 2.



Luma and chroma Gain and EQ potentiometers for an output pair

Settings for short cables

At the factory, the DA AV EQ pots are set precisely to the unity gain position (with the arrow on the pot pointing to the dot beside or above it). If you are using very short output cables, **do not turn these pots**; leave them at the factory default setting. If the pots have already been turned, reset them to the default position. The illustration below shows outputs 1 and 2 set to the unity gain position.



Potentiometers for outputs 1 and 2 at unity gain settings

Adjusting for long cables

If you are using long cables, you need to adjust the Gain and EQ potentiometers (pots) until you have the best picture quality. Using an oscilloscope is recommended; however, you can make these adjustments without one. Both methods are described below.

Adjusting with an oscilloscope

1. Feed a grayscale signal from an Extron VTG 300/400 or other A/V test generator to the input of the DA AV EQ.
2. Remove the far end of the output cable from the display, and connect it to the oscilloscope with 75 ohm termination.
3. Adjust the composite video or Y Gain pot to achieve 0.7 Vp-p for the white bar of the test pattern. For the S-video models, adjust the C gain pot to achieve 0.3 Vp-p of color burst level.
4. Adjust the EQ pot until no overshooting or round corners appear on the test pattern.
5. Repeat steps **1** through **4** for all other output pairs.
6. Plug the far end of the cable back into the display device.

Adjusting without an oscilloscope

1. Feed a grayscale signal from an Extron VTG 300/400 or other A/V test generator to the input of the DA AV EQ.
2. Adjust the composite video or Y Gain pot until the picture from the display device appears to have the correct brightness and contrast.
3. Adjust the EQ pot until the picture appears sharp and without visible smearing.
4. Repeat steps **1** through **3** for all other output pairs.

Appendix A

Specifications, Parts, and Accessories

Specifications

Video

Gain (all models except DA 6A and DA 3AV RCA)

- Video and Y ..... -1 dB to +3 dB (x 0.9 to x 1.4), adjustable per every 2 outputs
- C (chroma) ..... 0 dB to +10 dB (x 1 to x 3), adjustable for DA 6SV EQ, DA 6SVA EQ, and DA 6SVA RCA EQ

Equalization (all models except DA 6A and DA 3AV RCA)
0 dB to +6 dB (x 1 to x 2) at 5 MHz, adjustable per every 2 outputs

Bandwidth ..... 150 MHz (-3 dB)

Output cable driving distance ... Up to 1000 feet with Mini HR cable
Up to 1500 feet with RG6 or RG59 cables

Video input and loop-through

Number/signal type

- DA 6V EQ, DA 6AV EQ, DA 6AV RCA EQ, and DA 3AV RCA: 1 composite video input, 1 composite video passive loop-through
- DA 6SV EQ, DA 6SVA EQ, and DA 6SVA RCA EQ: 1 S-video, 1 S-video passive loop-through
- DA 12V/6V Dual EQ and DA 8V/4V Dual EQ: 1 composite video and 1 buffered loop-through **or** 2 composite video

Connectors

- DA 6V EQ, DA 6AV EQ, DA 6AV RCA EQ, and DA 3AV RCA: 1 female BNC (input), 1 female BNC (loop-through)
- DA 6SV EQ, DA 6SVA EQ, and DA 6SVA RCA EQ: 1 female 4-pin mini DIN (input) and 1 female 4-pin mini DIN (loop-through)
- DA 12V/6V Dual EQ ..... 2 female BNC
- DA 8V/4V Dual EQ ..... 2 female BNC

Nominal level ..... 1 Vp-p for composite video and for Y of S-video
0.3 Vp-p for C of S-video

Minimum/maximum levels

Composite video or Y signal
0.4 V to 2.0 Vp-p with no offset at unity gain

DA 6SV EQ, DA 6SVA EQ, and DA 6SVA RCA EQ
Y: 0.4 V to 2.0 Vp-p with no offset at unity gain

Impedance

- DA 8V/4V Dual EQ and DA 12V/6V Dual EQ: 75 ohms
- All other models ..... 75 ohms or Hi-Z, selectable

Return loss ..... -30 dB @ 5 MHz

DC offset (max. allowable) ..... 4.0 V, AC coupled

Video output

Number/signal type

- DA 6V EQ, DA 6AV EQ, and DA 6AV RCA EQ: 6 composite video
- DA 6SV EQ, DA 6SVA EQ, and DA 6SVA RCA EQ: 6 S-video
- DA 12V/6V Dual EQ ..... 12 composite video
- DA 8V/4V Dual EQ ..... 8 composite video
- DA 3AV RCA ..... 3 composite video

Connectors

- DA 6V EQ, DA 6AV EQ, and DA 6AV RCA EQ: 6 female BNC
- DA 6SV EQ, DA 6SVA EQ, and DA 6SVA RCA EQ: 6 female 4-pin mini DIN
- DA 12V/6V Dual EQ ..... 12 female BNC
- DA 8V/4V Dual EQ ..... 8 female BNC
- DA 3AV RCA ..... 3 female BNC

Nominal level ..... 1 Vp-p for composite video and for Y of S-video
0.3 Vp-p for C of S-video

Minimum/maximum levels ..... 0.4 V to 2.0 Vp-p

Impedance ..... 75 ohms

Return loss ..... -30 dB @ 5 MHz

Sync

Standards ..... NTSC 3.58, NTSC 4.43, PAL, SECAM

Audio

Gain ..... Unity when internal jumpers are set to match output wiring. See table below for other conditions.

Output Wiring \ Jumper Position	Balanced (Jumper on right and middle pin)	Unbalanced (Jumper on left and middle pin)
Balanced	0 dB	+6 dB
Unbalanced	-6 dB	0 dB

Frequency response ..... 20 Hz to 20 kHz, ±0.08 dB (with voltage reference @ 1 kHz)

THD + Noise ..... 0.03% @ 1 kHz at nominal level

S/N (at any output) ..... >90 dB, unbalanced, at maximum output (unweighted)

Stereo channel separation ..... >80 dB @ 1 kHz; >60 dB @ 20 kHz

CMRR ..... >75 dB @ 20 Hz to 20 kHz

Output cable driving distance ... Up to 1000 feet with STP 22 cable

Audio input

Number/signal type

RCA models ..... 1 stereo, unbalanced

DA 6A, DA 6AV EQ, and DA 6SVA EQ

1 stereo, balanced/unbalanced

Connectors

RCA models ..... 1 pair female RCA

DA 6A, DA 6AV EQ, and DA 6SVA EQ

(1) 3.5 mm captive screw connector, 5 pole

Impedance

RCA models ..... 18 k ohms, unbalanced, DC coupled

DA 6A, DA 6AV EQ, and DA 6SVA EQ

18 k ohms unbalanced,
>24k ohms balanced, DC coupled

Nominal level ..... Compatible with +4 dBu (1.23 Vrms), 0 dBu (0.775 Vrms), -10 dBV (316 m Vrms), -20 dBV (100 m Vrms)

Maximum level

RCA models ..... +18 dBu, (unbalanced) at 1% THD+N

DA 6A, DA 6AV EQ, and DA 6SVA EQ

+24 dBu, (balanced) at 1%THD+N

NOTE *0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu*

Audio output

Number/signal type

DA 6AV RCA EQ and DA 6SVA RCA EQ

6 stereo, unbalanced

DA 3AV RCA ..... 3 stereo, unbalanced

DA 6A, DA 6AV EQ, and DA 6SVA EQ

6 stereo, balanced/unbalanced

Connectors

DA 6AV RCA EQ and DA 6SVA RCA EQ

6 pairs of female RCA jacks

DA 3AV RCA ..... 3 pairs of female RCA jacks

DA 6A, DA 6AV EQ, and DA 6SVA EQ

(6) 3.5 mm captive screw connectors, 5 pole

Impedance

RCA models ..... 50 ohms unbalanced

DA 6AV EQ, DA 6SVA EQ, and DA 6A

50 ohms unbalanced, 100 ohms balanced

Maximum level (Hi-Z)

RCA models ..... >+18 dBu, unbalanced at 1% THD+N

DA 6A, DA 6AV EQ, and DA 6SVA EQ

>+24 dBu, balanced at 1% THD+N

Maximum level (600 ohm)

DA 6A, DA 6AV EQ, and DA 6SVA EQ

>+15 dBm, balanced at 1%THD+N

General

Power ..... 100 VAC to 240 VAC, 50/60 Hz, 8 watts, internal

Temperature/humidity ..... Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing
Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing

Rack mount ..... Yes, with optional 1U, 9.5" deep rack shelf, part #60-190-01 (RSU 129) or 60-604-01 (RSB 129); or 1U, 6" deep rack shelf, part #60-190-10 (RSU 126) or 60-604-10 (RSB 126)
Also furniture mountable with an optional Under-Desk Mounting Kit, #70-077-01, or Through-Desk Mounting Kit, #70-077-02

Enclosure type ..... Metal

Enclosure dimensions	1.7" H x 8.7" W x 6.0" D (1U high, half rack wide) 4.3 cm H x 22.1 cm W x 15.2 cm D (Depth excludes connectors.)
Cooling	Convection, unvented
Product weight	2 lbs (0.9 kg)
Shipping weight	4 lbs (2 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE *All nominal levels are at ±10%.*

NOTE *Specifications are subject to change without notice.*

Models

Model	Part number
DA 6V EQ	60-692-01
DA 6AV EQ	60-692-21
DA 6AV RCA EQ	60-692-31
DA 6SV EQ	60-692-02
DA 6SVA EQ	60-692-22
DA 6SVA RCA EQ	60-692-32
DA 6A	60-692-20
DA 8V/4V Dual EQ	60-693-01
DA 12V/6V Dual EQ	60-694-01
DA 3AV RCA	60-695-31

Included Parts

These items are included in each order for a DA AV EQ:

Included part	Part number
IEC power cord	
5-pin 3.5 mm captive screw connectors (7) (DA 6AV EQ, DA 6SVA EQ, and DA 6A)	10-10-319
Tweeker (small screwdriver)	
Rubber feet (not attached)	
DA AV EQ Series User's Manual	

Optional Accessories

These items can be ordered separately:

Accessory	Part number
RSU 129 1U, 9.5" Deep Universal Rack Shelf Kit	60-190-01
RSB 129 1U, 9.5" Deep Basic Rack Shelf	60-604-01
RSU 126 1U, 6" Deep Universal Rack Shelf Kit	60-190-10
RSB 126 1U, 6" Deep Basic Rack Shelf	60-604-10
MBU 125 Under-desk Mount Kit	70-077-01
MBU 129 Through-desk Mount Kit	70-077-02

Cables

The following cables can be ordered as needed:

Cable	Part number
MHR-2 SVM-M Male to Male 4-pin Mini DIN S-Video Cables (S-video models only)	26-316-xx
MHR-2P SVM-M Male to Male 4-pin Mini DIN S-Video cables, plenum (S-video models only)	26-522-xx
RG6 BNC Series BNC Male to Male Single Conductor SHR cables	26-383-xx
CSR 6 Captive Screw to RCA Female Audio Adapter (audio models only)	26-575-01
RCA Male to Male Stereo Audio cable (audio models only)	IN87xx